OT 1 5 2001 &

## SEQUENCE LISTING

ADEN ADIX CO	SEQUENCE LISTING	
<110>	Wu, Hongjiang Crooke, Stanley T.	
<120>	Human RNAse III and Compositions and Uses Thereof	
<130> <140>	ISPH-0522 US 09/900,425	
<141>	2001-07-06	
<150> <151>	US 09/479,783 2000-01-07	
<150> <151>	US 08/870,608 1997-06-06	
<150> <151>	US 80/659,440 1996-06-06	
<160>	36	
<170>	PatentIn version 3.1	
<210> <211> <212> <213>	1 4764 DNA Homo sapiens	
<400> ctgtct	1 tggt acctgcggta gtagcctggc tttgctctga cggcgatctc gcggcccgag	60
	ttat aggttgcttt tcccggggat gtgaaggata cagaaatgac tgtgaatcaa	120
cccata	tcat caaggagctg ataatctagt ggaagagtta gacgtgtgca tacttcacta	180
tgatat	gagg cagtetetga gettatatte tetgtggaag atgtgacata tecaggegga	240
acatca	tgat gcagggaaac acatgtcaca gaatgtcgtt ccacccggga cgagggtgtc	300
cccgag	gacg aggaggacat ggagccagac cctcagcacc atcctttagg ccccaaaatc	360
tgaggc	tgct tcaccctcag cagcctcctg tgcaatatca atatgaacct ccaagtgccc	420
cttcca	ccac tttctcaaac tctccagccc ccaattttct ccctccacga ccagactttg	480
taccct	tece eccaeceatg ecteegteag egeaaggeee tetteeeece tgeecaatea	540
ggccgc	cttt ccccaaccac cagatgaggc accecttece agtteeteet tgtttteete	600
ccatgc	cacc accaatgeet tgteetaata acceeccagt eeetggggea eeteetggae	660
aaggca	cttt ccccttcatg atgccccctc cctccatgcc tcatcccccg ccccctccag	720
tcatgc	cgca gcaggttaat tatcagtacc ctccgggcta ttctcaccac aacttcccac	780
ctccca	gttt taatagtttc cagaacaacc ctagttcttt cctgcccagt gctaataaca	840

900 quagtagtec teattteaga catetecete catacecaet eccaaagget eccagtgaga gaaggtcccc agaaaggctg aaacactatg atgaccacag gcaccgagat cacagtcatg 960 1020 ggcgaggtga gaggcatcgg tccctggatc ggcgggagcg aggccgcagt cccgacagga gaagacaaga cagccggtac agatctgatt atgaccgagg gagaacacca tctcgccacc 1080 gcagctacga acggagcaga gagcgagaac gggagagaca caggcatcga gacaaccgaa 1140 gatcaccatc totggaaagg tootacaaaa aagagtataa gagatotgga aggagttacg 1200 gtttatcggt tgttcctgaa cctgctggat gcacaccaga attacctggg gagattatta 1260 1320 aaaatacaga ttcttgggcc ccacccctgg agattgtgaa tcatcgctcc ccaagtaggg agaagaagag agctcgttgg gaggaagaaa aagaccgttg gagtgacaac cagagttctg 1380 1440 gcaaagacaa gaactatacc tcaatcaagg aaaaagagcc cgaggagacc atgcctgaca 1500 agaatgagga ggaagaagaa gaacttetta ageetgtgtg gattegatge acteatteag 1560 aaaactacta ctccagtgac cccatggatc aggtgggaga ttctacagtg gttggaacga gtaggcttcg tgacttatat gacaaatttg aggaggagtt ggggagcagg caagaaaagg 1620 1680 ccaaagctgc tcggcctccg tgggaacctc caaagacgaa gctcgatgaa gatttagaga gttccagtga atccgagtgt gagtctgatg aggacagcac ctgttctagc agctcagact 1740 ctgaagtttt tgacgttatt gcagaaatca aacgcaaaaa ggcccaccct gaccgacttc 1800 atgatgaact ttggtacaac gatccaggcc agatgaatga tggaccactc tgcaaatgca 1860 1920 gcgcaaaggc aagacgcaca ggaattaggc acagcattta tcctggagaa gaggccatca agccctgtcg tcctatgacc aacaatgctg gcagactttt ccactaccgg atcacagtct 1980 ccccgcctac gaacttttta actgacaggc caactgttat agaatacgat gatcacgagt 2040 2100 atatetttga aggattttet atgtttgeae atgeceeect gaccaatatt ecaetgtgta 2160 atttttgtgt gaaagggctt gaactctttt cactgttcct attcagagat attttggaat 2220 2280 tatatgactg gaatcttaaa ggtcctttgt ttgaagacag ccctccctgc tgcccaagat 2340 2400 tgcaccagat tctcctgtac ttgttaaggt gcagcaaagc cctggtgcct gaggaggaga ttgccaatat gcttcagtgg gaggagctgg agtggcagaa atatgcagaa gaatgcaaag 2460 gcatgattgt taccaaccct gggacgaaac caagctctgt ccgtatcgat caactggatc 2520 gtgaacagtt caaccccgat gtgattactt ttccgattat cgtccacttt gggatacgcc 2640 ctgcacagtt gagttatgca ggagacccac agtaccaaaa actgtggaag agttatgtga aacttcgcca cctcctagca aatagtccca aagtcaaaca aactgacaaa cagaagctgg 2700 2760 cacagaggga ggaagccctc caaaaaatac ggcagaagaa tacaatgaga cgagaagtaa 2820 cggtggagct aagtagccaa ggattctgga aaactggcat ccgttctgat gtctgtcagc 2880 atgcaatgat gctacctgtt ctgacccatc atatccgcta ccaccaatgc ctaatgcatt tggacaagtt gataggatat actttccaag atcgttgtct gttgcagctg gccatgactc 2940 3000 atccaagtca tcatttaaat tttggaatga atcctgatca tgccaggaat tcattatcta 3060 actgtggaat tcggcagccc aaatacggag acagaaaagt tcatcacatg cacatgcgga agaaagggat taacaccttg ataaatatca tgtcacgcct tggccaagat gacccaactc 3120 cctcgaggat taaccacaat gaacggttgg aattcctggg tgatgctgtt gttgaatttc 3180 3240 tgaccagcgt ccatttgtac tatttgtttc ctagtctgga agaaggagga ttagcaacct 3300 ateggactge cattgttcag aateageace ttgccatget ageaaagaaa ettgaactgg atccatttat gctgtatgct cacgggcctg acctttgtag agaatcggac cttcgacatg 3360 3420 caatggccaa ttgttttgaa gcgttaatag gagctgttta cttggaggga agcctggagg aagccaagca gttatttgga cgcttgctct ttaatgatcc ggacctgcgc gaagtctggc 3480 tcaattatcc tctccaccca ctccaactac aagagccaaa tactgatcga caacttattg 3540 aaacttctcc agttctacaa aaacttactg agtttgaaga agcaattgga gtaattttta 3600 3660 ctcatgttcg acttctggca agggcattca cattgagaac tgtgggattt aaccatctga ccctaggcca caatcagaga atggaattcc taggtgactc cataatgcaa ctggtagcca 3720 3780 cagagtactt attcattcat ttcccagatc atcatgaagg acacttaact ttgttgcgaa 3840 gctctttggt gaataataga actcaggcca aggtagcgga ggagctgggc atgcaggagt 3900 acgccataac caacgacaag accaagaggc ctgtggcgct tcgcaccaag accttggcgg 3960 accttttgga atcatttatt gcagcgctgt acactgataa ggatttggaa tatgttcata ctttcatgaa tgtctgcttc tttccacgat tgaaagaatt cattttgaat caggattgga 4020 4080 atgaccccaa atcccagctt cagcagtgtt gcttgacact taggacagaa ggaaaagagc cagacattcc tctgtacaag actctgcaga cagtgggccc atcccatgcc cgaacctaca 4140 4200 ctgtggctgt ttatttcaag ggagaaagaa taggctgtgg gaaaggacca agtattcagc aageggaaat gggageagea atggatgege ttgaaaaata taatttteee cagatggeee 4260

atcagaagcg gttcatcgaa cggaagtaca gacaagagtt aaaagaaatg aggtgggaaa 4320 gagagcatca agagagagg ccagatgaga ctgaagacat caagaaataa aggagggcat 4380 gcaagtgtgg agtatttact tgctcagtaa ctgtgactgt tgtctattga gacctagcct 4440 agttttcctg cagacaatga acgaagtgtg ctcattgaaa taaaatacag agtcaaatcg 4500 ctattgttgt tttaatgatc tgtttttagc tggatggtct ttattacaaa gtattagatt 4560 tttcttctat ttaacggaaa acttgacttt ggtgaatgtg cattacttcc ttttattttg 4620 ctctttaaat aataaaattc aagaagcata ttctatgtgg aatagatcct gtttttccat 4680 ctgtgtccca gattgtgacc ctagacttc aattgacaag taaaaaattg actttactag 4740 taaaaaaaaa aaaaaaaaa aaaaa

<210> 2

<211> 1374

<212> PRT

<213> Homo sapiens

<400> 2

Met Met Gln Gly Asn Thr Cys His Arg Met Ser Phe His Pro Gly Arg

1 10 15

Gly Cys Pro Arg Gly Arg Gly Gly His Gly Ala Arg Pro Ser Ala Pro 20 25 30

Ser Phe Arg Pro Gln Asn Leu Arg Leu Leu His Pro Gln Gln Pro Pro 35 40 45

Val Gln Tyr Gln Tyr Glu Pro Pro Ser Ala Pro Ser Thr Thr Phe Ser 50 55 60

Asn Ser Pro Ala Pro Asn Phe Leu Pro Pro Arg Pro Asp Phe Val Pro 65 70 75 80

Phe Pro Pro Pro Met Pro Pro Ser Ala Gln Gly Pro Leu Pro Pro Cys
85 90 95

Pro Ile Arg Pro Pro Phe Pro Asn His Gln Met Arg His Pro Phe Pro 100 105 110

Val Pro Pro Cys Phe Pro Pro Met Pro Pro Met Pro Cys Pro Asn 115 120 125

Asn Pro Pro Val Pro Gly Ala Pro Pro Gly Gln Gly Thr Phe Pro Phe 130 135 140

Met Met Pro Pro Pro Ser Met Pro His Pro Pro Pro Pro Pro Val Met 145 150 155 160

Pro Gln Gln Val Asn Tyr Gln Tyr Pro Pro Gly Tyr Ser His His Asn 165 170 Phe Pro Pro Pro Ser Phe Asn Ser Phe Gln Asn Asn Pro Ser Ser Phe 185 Leu Pro Ser Ala Asn Asn Ser Ser Ser Pro His Phe Arg His Leu Pro Pro Tyr Pro Leu Pro Lys Ala Pro Ser Glu Arg Arg Ser Pro Glu Arg 215 Leu Lys His Tyr Asp Asp His Arg His Arg Asp His Ser His Gly Arg Gly Glu Arg His Arg Ser Leu Asp Arg Glu Arg Gly Arg Ser Pro 250 Asp Arg Arg Gln Asp Ser Arg Tyr Arg Ser Asp Tyr Asp Arg Gly Arg Thr Pro Ser Arg His Arg Ser Tyr Glu Arg Ser Arg Glu Arg Glu Arg Glu Arg His Arg His Arg Asp Asn Arg Arg Ser Pro Ser Leu Glu Arg Ser Tyr Lys Lys Glu Tyr Lys Arg Ser Gly Arg Ser Tyr Gly Leu Ser Val Val Pro Glu Pro Ala Gly Cys Thr Pro Glu Leu Pro Gly Glu 330 Ile Ile Lys Asn Thr Asp Ser Trp Ala Pro Pro Leu Glu Ile Val Asn His Arg Ser Pro Ser Arg Glu Lys Lys Arg Ala Arg Trp Glu Glu Glu Lys Asp Arg Trp Ser Asp Asn Gln Ser Ser Gly Lys Asp Lys Asn Tyr Thr Ser Ile Lys Glu Lys Glu Pro Glu Glu Thr Met Pro Asp Lys Asn 395 390 Glu Glu Glu Glu Glu Leu Leu Lys Pro Val Trp Ile Arg Cys Thr His Ser Glu Asn Tyr Tyr Ser Ser Asp Pro Met Asp Gln Val Gly Asp 425 Ser Thr Val Val Gly Thr Ser Arg Leu Arg Asp Leu Tyr Asp Lys Phe Glu Glu Glu Leu Gly Ser Arg Gln Glu Lys Ala Lys Ala Ala Arg Pro 455

Pro Trp Glu Pro Pro Lys Thr Lys Leu Asp Glu Asp Leu Glu Ser Ser 475 470 Ser Glu Ser Glu Cys Glu Ser Asp Glu Asp Ser Thr Cys Ser Ser Ser 485 490 Ser Asp Ser Glu Val Phe Asp Val Ile Ala Glu Ile Lys Arg Lys 500 505 Ala His Pro Asp Arg Leu His Asp Glu Leu Trp Tyr Asn Asp Pro Gly Gln Met Asn Asp Gly Pro Leu Cys Lys Cys Ser Ala Lys Ala Arg Arg Thr Gly Ile Arg His Ser Ile Tyr Pro Gly Glu Glu Ala Ile Lys Pro 555 550 Cys Arg Pro Met Thr Asn Asn Ala Gly Arg Leu Phe His Tyr Arg Ile Thr Val Ser Pro Pro Thr Asn Phe Leu Thr Asp Arg Pro Thr Val Ile Glu Tyr Asp Asp His Glu Tyr Ile Phe Glu Gly Phe Ser Met Phe Ala 595 His Ala Pro Leu Thr Asn Ile Pro Leu Cys Lys Val Ile Arg Phe Asn 615 Ile Asp Tyr Thr Ile His Phe Ile Glu Glu Met Met Pro Glu Asn Phe 625 630 635 Cys Val Lys Gly Leu Glu Leu Phe Ser Leu Phe Leu Phe Arg Asp Ile 650 Leu Glu Leu Tyr Asp Trp Asn Leu Lys Gly Pro Leu Phe Glu Asp Ser 660 665 Pro Pro Cys Cys Pro Arg Phe His Phe Met Pro Arg Phe Val Arg Phe Leu Pro Asp Gly Gly Lys Glu Val Leu Ser Met His Gln Ile Leu Leu Tyr Leu Leu Arg Cys Ser Lys Ala Leu Val Pro Glu Glu Glu Ile Ala Asn Met Leu Gln Trp Glu Glu Leu Glu Trp Gln Lys Tyr Ala Glu Glu 730 Cys Lys Gly Met Ile Val Thr Asn Pro Gly Thr Lys Pro Ser Ser Val Arg Ile Asp Gln Leu Asp Arg Glu Gln Phe Asn Pro Asp Val Ile Thr 765 760

- Phe Pro Ile Ile Val His Phe Gly Ile Arg Pro Ala Gln Leu Ser Tyr 775 Ala Gly Asp Pro Gln Tyr Gln Lys Leu Trp Lys Ser Tyr Val Lys Leu Arg His Leu Leu Ala Asn Ser Pro Lys Val Lys Gln Thr Asp Lys Gln Lys Leu Ala Gln Arg Glu Glu Ala Leu Gln Lys Ile Arg Gln Lys Asn 825 Thr Met Arg Arg Glu Val Thr Val Glu Leu Ser Ser Gln Gly Phe Trp Lys Thr Gly Ile Arg Ser Asp Val Cys Gln His Ala Met Met Leu Pro 855 860 Val Leu Thr His His Ile Arg Tyr His Gln Cys Leu Met His Leu Asp Lys Leu Ile Gly Tyr Thr Phe Gln Asp Arg Cys Leu Leu Gln Leu Ala Met Thr His Pro Ser His His Leu Asn Phe Gly Met Asn Pro Asp His 900 905 Ala Arg Asn Ser Leu Ser Asn Cys Gly Ile Arg Gln Pro Lys Tyr Gly Asp Arg Lys Val His His Met His Met Arg Lys Lys Gly Ile Asn Thr 930 935 940 Leu Ile Asn Ile Met Ser Arg Leu Gly Gln Asp Asp Pro Thr Pro Ser Arg Ile Asn His Asn Glu Arg Leu Glu Phe Leu Gly Asp Ala Val Val
- 965 970 975
- Glu Phe Leu Thr Ser Val His Leu Tyr Tyr Leu Phe Pro Ser Leu Glu 980 985 990
- Glu Gly Gly Leu Ala Thr Tyr Arg Thr Ala Ile Val Gln Asn Gln His 995 1000 1005
- Leu Ala Met Leu Ala Lys Lys Leu Glu Leu Asp Pro Phe Met Leu Tyr 1010 1015 1020
- Ala His Gly Pro Asp Leu Cys Arg Glu Ser Asp Leu Arg His Ala Met 1025 1030 1035 1040
- Ala Asn Cys Phe Glu Ala Leu Ile Gly Ala Val Tyr Leu Glu Gly Ser 1045 1050 1055
- Leu Glu Glu Ala Lys Gln Leu Phe Gly Arg Leu Leu Phe Asn Asp Pro 1060 1065 1070

- Asp Leu Arg Glu Val Trp Leu Asn Tyr Pro Leu His Pro Leu Gln Leu 1075 1080 1085
- Gln Glu Pro Asn Thr Asp Arg Gln Leu Ile Glu Thr Ser Pro Val Leu 1090 1095 1100
- Gln Lys Leu Thr Glu Phe Glu Glu Ala Ile Gly Val Ile Phe Thr His 1105 1110 1115 1120
- Val Arg Leu Leu Ala Arg Ala Phe Thr Leu Arg Thr Val Gly Phe Asn 1125 1130 1135
- His Leu Thr Leu Gly His Asn Gln Arg Met Glu Phe Leu Gly Asp Ser 1140 1145 1150
- Ile Met Gln Leu Val Ala Thr Glu Tyr Leu Phe Ile His Phe Pro Asp 1155 1160 1165
- His His Glu Gly His Leu Thr Leu Leu Arg Ser Ser Leu Val Asn Asn 1170 1175 1180
- Arg Thr Gln Ala Lys Val Ala Glu Glu Leu Gly Met Gln Glu Tyr Ala 1185 1190 1195 1200
- Ile Thr Asn Asp Lys Thr Lys Arg Pro Val Gly Leu Arg Thr Lys Thr 1205 1210 1215
- Leu Ala Asp Leu Leu Glu Ser Phe Ile Ala Ala Leu Tyr Thr Asp Lys 1220 1225 1230
- Asp Leu Glu Tyr Val His Thr Phe Met Asn Val Cys Phe Phe Pro Arg 1235 1240 1245
- Leu Lys Glu Phe Ile Leu Asn Gln Asp Trp Asn Asp Pro Lys Ser Gln 1250 1260 1260
- Leu Gln Gln Cys Cys Leu Thr Leu Arg Thr Glu Gly Lys Glu Pro Asp 1270 1280
- Ile Pro Leu Tyr Lys Thr Leu Gln Thr Val Gly Pro Ser His Ala Arg 1285 1290 1295
- Thr Tyr Thr Val Ala Val Tyr Phe Lys Gly Glu Arg Ile Gly Cys Gly 1300 1305 1310
- Lys Gly Pro Ser Ile Gln Gln Ala Glu Met Gly Ala Ala Met Asp Ala 1315 1320 1325
- Leu Glu Lys Tyr Asn Phe Pro Gln Met Ala His Gln Lys Arg Phe Ile 1330 1335 1340 1345
- Gly Arg Lys Tyr Arg Gln Glu Leu Lys Glu Met Arg Trp Glu Arg Glu
  1350 1355 1360
- His Gln Glu Arg Glu Pro Asp Glu Thr Glu Asp Ile Lys Lys 1365 1370

<210> 3

<211> 412

<212> PRT

<213> Caenorhabditis elegans

<400> 3

Met Ser Leu Phe Asn Ile Met Lys Gly Thr Ser Gly Gly Glu Pro Ile 1 5 10 15

Leu His Asn Glu Arg Leu Glu Tyr Leu Gly Asp Ala Val Val Glu Leu 20 25 30

Ile Val Ser His His Leu Tyr Phe Met Leu Thr His His Phe Glu Gly 35 40 45

Gly Leu Ala Thr Tyr Arg Thr Ala Leu Val Gln Asn Arg Asn Leu Ala 50 55 60

Thr Leu Ala Lys Asn Cys Arg Ile Asp Glu Met Leu Gln Tyr Ser His 65 70 75 80

Gly Ala Asp Leu Ile Asn Val Ala Glu Phe Lys His Ala Leu Ala Asn 85 90 95

Ala Phe Glu Ala Val Met Ala Ala Ile Tyr Leu Asp Gly Gly Leu Ala 100 105 110

Pro Cys Asp Val Ile Phe Ser Lys Ala Met Tyr Gly His Gln Pro Val 115 120 125

Leu Lys Glu Lys Trp Asp His Ile Asn Glu His Glu Leu Lys Arg Glu 130 135 140

Asp Pro Gln Gly Asp Arg Asp Leu Ser Phe Ile Thr Pro Thr Leu Ser 145 150 155 160

Thr Phe His Ala Leu Glu Glu Arg Leu Gly Ile Gln Phe Asn Asn Ile 165 170 175

Arg Leu Leu Ala Lys Ala Phe Thr Arg Arg Asn Ile Pro Asn Asn Asp 180 185 190

Leu Thr Lys Gly His Asn Gln Arg Leu Glu Trp Leu Gly Asp Ser Val 195 200 205

Leu Gln Leu Ile Val Ser Asp Phe Leu Tyr Arg Arg Phe Pro Tyr His 210 215 220

His Glu Gly His Met Ser Leu Leu Arg Thr Ser Leu Val Ser Asn Gln 225 230 235 240

Thr Gln Ala Val Val Cys Asp Asp Leu Gly Phe Thr Glu Phe Val Ile 245 250 255 Lys Ala Pro Tyr Lys Thr Pro Glu Leu Lys Leu Lys Asp Lys Ala Asp 260 265 270

Leu Val Glu Ala Phe Ile Gly Ala Leu Tyr Val Asp Arg Gly Ile Glu 275 280 285

His Cys Arg Ala Phe Ile Arg Ile Val Phe Cys Pro Arg Leu Lys His 290 295 300

Phe Ile Glu Ser Glu Lys Trp Asn Asp Ala Lys Ser His Leu Gln Gln 305 310 315

Trp Cys Leu Ala Met Arg Asp Pro Ser Ser Ser Glu Pro Asp Met Pro 325 330 335

Glu Tyr Arg Val Leu Gly Ile Glu Gly Pro Thr Asn Asn Arg Ile Phe 340 345 350

Lys Ile Ala Val Tyr Tyr Lys Gly Lys Arg Leu Ala Ser Ala Ala Glu 355 360 365

Ser Asn Val His Lys Ala Glu Leu Arg Val Ala Glu Leu Ala Leu Ala 370 380

Asn Leu Glu Ser Met Ser Phe Ser Lys Met Lys Ala Lys Asn Asn Ser 385 390 395 400

Asn Met Arg Arg Arg Leu Glu Gln Asp Thr Ser Asp 405 410

<210> 4

<211> 366

<212> PRT

<213> Saccharomyces pombe

<400> 4

Met Gly Arg Phe Lys Arg His His Glu Gly Asp Ser Asp Ser Ser Ser 1 5 10 15

Ser Ala Ser Asp Ser Leu Ser Arg Gly Arg Arg Ser Leu Gly His Lys 20 25 30

Arg Ser Ser His Ile Lys Asn Arg Gln Tyr Tyr Ile Leu Glu Lys Lys 35 40 45

Ile Arg Lys Leu Met Phe Ala Met Lys Ala Leu Leu Glu Glu Thr Lys
50 60

His Ser Thr Lys Asp Asp Val Asn Leu Val Ile Pro Gly Ser Thr Trp 65 70 75 80

Ser His Ile Glu Gly Val Tyr Glu Met Leu Lys Ser Arg His Asp Arg 85 90 95

Gln Asn Glu Pro Val Ile Glu Glu Pro Ser Ser His Pro Lys Asn Gln

Lys Asn Glu Asn Asn Glu Pro Thr Ser Glu Glu Phe Glu Glu Gly 120 Glu Tyr Pro Pro Pro Leu Pro Pro Leu Arg Ser Glu Lys Leu Lys Glu 135 Gln Val Phe Met His Ile Ser Arg Ala Tyr Glu Ile Tyr Pro Asn Gln 150 Ser Asn Pro Asn Glu Leu Leu Asp Ile His Asn Glu Arg Leu Glu Phe 165 170 Leu Gly Asp Ser Phe Phe Asn Leu Phe Thr Thr Arg Ile Ile Phe Ser 185 Lys Phe Pro Gln Met Asp Glu Gly Ser Leu Ser Lys Leu Arg Ala Lys Phe Val Gly Asn Glu Ser Ala Asp Lys Phe Ala Arg Leu Tyr Gly Phe Asp Lys Thr Leu Val Leu Ser Tyr Ser Ala Glu Lys Asp Gln Leu Arg Lys Ser Gln Lys Val Ile Ala Asp Thr Phe Glu Ala Tyr Leu Gly Ala 250 Leu Ile Leu Asp Gly Gln Glu Glu Thr Ala Phe Gln Trp Val Ser Arg Leu Leu Gln Pro Lys Ile Ala Asn Ile Thr Val Gln Arg Pro Ile Asp Lys Leu Ala Lys Ser Lys Leu Phe His Lys Tyr Ser Thr Leu Gly His Ile Glu Tyr Arg Trp Pro Ala Cys Val Asp Gly Ala Gly Gly Ser Ala Glu Gly Tyr Val Ile Ala Cys Ile Phe Asn Gly Lys Glu Val Ala Arg Ala Trp Gly Ala Asn Gln Lys Asp Ala Gly Ser Arg Ala Ala Met Gln Ala Leu Glu Val Leu Ala Lys Asp Tyr Ser Lys Phe Ala Arg 355 360

<210> 5

<211> 471

<212> PRT

<213> Saccharomyces.cerevisiae

<400> 5

- Met Gly Ser Lys Val Ala Gly Lys Lys Lys Thr Gln Asn Asp Asn Lys 1 5 10 15
- Leu Asp Asn Glu Asn Gly Ser Gln Gln Arg Glu Asn Ile Asn Thr Lys
  20 25 30
- Thr Leu Leu Lys Gly Asn Leu Lys Ile Ser Asn Tyr Lys Tyr Leu Glu 35 40 45
- Val Ile Gln Leu Glu His Ala Val Thr Lys Leu Val Glu Ser Tyr Asn 50 55 60
- Lys Ile Ile Glu Leu Ser Pro Asn Leu Val Ala Tyr Asn Glu Ala Val 65 70 75 80
- Asn Asn Gln Asp Arg Val Pro Val Gln Ile Leu Pro Ser Leu Ser Arg
- Tyr Gln Leu Lys Leu Ala Ala Glu Leu Lys Thr Leu His Asp Leu Lys 100 105 110
- Lys Asp Ala Ile Leu Thr Glu Ile Thr Asp Tyr Glu Asn Glu Phe Asp 115 120 125
- Thr Glu Gln Lys Gln Pro Ile Leu Gln Glu Ile Ser Lys Ala Asp Met 130 135 140
- Glu Lys Leu Glu Lys Leu Glu Gln Val Lys Arg Glu Lys Arg Glu Lys 145 150 155 160
- Ile Asp Val Asn Val Tyr Glu Asn Leu Asn Glu Lys Glu Asp Glu Glu 165 170 175
- Glu Asp Glu Gly Glu Asp Ser Tyr Asp Pro Thr Lys Ala Gly Asp Ile 180 185 190
- Val Lys Ala Thr Lys Trp Pro Pro Lys Leu Pro Glu Ile Gln Asp Leu 195 200 205
- Ala Ile Arg Ala Arg Val Phe Ile His Lys Ser Thr Ile Lys Asp Lys 210 215 220
- Val Tyr Leu Ser Gly Ser Glu Met Ile Asn Ala His Asn Glu Arg Leu 225 230 235 240
- Glu Phe Leu Gly Asp Ser Ile Leu Asn Ser Val Met Thr Leu Ile Ile 245 250 255
- Tyr Asn Lys Phe Pro Asp Tyr Ser Glu Gly Gln Leu Ser Thr Leu Arg 260 265 270
- Met Asn Leu Val Ser Asn Glu Gln Ile Lys Gln Trp Ser Ile Met Tyr 275 280 285
- Asn Phe His Glu Lys Leu Lys Thr Asn Phe Asp Leu Lys Asp Glu Asn 290 295 300

Ser Asn Phe Gln Asn Gly Lys Leu Lys Leu Tyr Ala Asp Val Phe Glu 305 310 315 320

Ala Tyr Ile Gly Gly Leu Met Glu Asp Asp Pro Arg Asn Asn Leu Pro 325 330 335

Lys Ile Arg Lys Trp Leu Arg Lys Leu Ala Lys Pro Val Ile Glu Glu 340 345 350

Ala Thr Arg Asn Gln Val Ala Leu Glu Lys Thr Asp Lys Leu Asp Met 355 360 365

Asn Ala Lys Arg Gln Leu Tyr Ser Leu Ile Gly Tyr Ala Ser Leu Arg 370 375 380

Leu His Tyr Val Thr Val Lys Lys Pro Thr Ala Val Asp Pro Asn Ser 385 390 395 400

Ile Val Glu Cys Arg Val Gly Asp Gly Thr Val Leu Gly Thr Gly Val 405 410 415

Gly Arg Asn Ile Lys Ile Ala Gly Ile Arg Ala Ala Glu Asn Ala Leu 420 425 430

Arg Asp Lys Lys Met Leu Asp Phe Tyr Ala Lys Gln Arg Ala Ala Ile 435 440 445

Pro Arg Ser Glu Ser Val Leu Lys Asp Pro Ser Gln Lys Asn Lys Lys 450 455 460

Arg Lys Phe Ser Asp Thr Ser 465 470

<210> 6

<211> 226

<212> PRT

<213> Escherichia coli

<400> 6

Met Asn Pro Ile Val Ile Asn Arg Leu Gln Arg Lys Leu Gly Tyr Thr 1 5 10 15

Phe Asn His Gln Glu Leu Leu Gln Gln Ala Leu Thr His Arg Ser Ala 20 25 30

Ser Ser Lys His Asn Glu Arg Leu Glu Phe Leu Gly Asp Ser Ile Leu 35 40 45

Ser Tyr Val Ile Ala Asn Ala Leu Tyr His Arg Phe Pro Arg Val Asp 50 55 60

Glu Gly Asp Met Ser Arg Met Arg Ala Thr Leu Val Arg Gly Asn Thr 65 70 75 80

Leu Ala Glu Leu Ala Arg Glu Phe Glu Leu Gly Glu Cys Leu Arg Leu 90 Gly Pro Gly Glu Leu Lys Ser Gly Gly Phe Arg Arg Glu Ser Ile Leu 105 Ala Asp Thr Val Glu Ala Leu Ile Gly Gly Val Phe Leu Asp Ser Asp Ile Gln Thr Val Glu Lys Leu Ile Leu Asn Trp Tyr Gln Thr Arg Leu 135 Asp Glu Ile Ser Pro Gly Asp Lys Gln Lys Asp Pro Lys Thr Arg Leu 145 Gln Glu Tyr Leu Gln Gly Arg His Leu Pro Leu Pro Thr Tyr Leu Val 170 Val Gln Val Arg Gly Glu Ala His Asp Gln Glu Phe Thr Ile His Cys 185 Gln Val Ser Gly Leu Ser Glu Pro Val Val Gly Thr Gly Ser Ser Arg Arg Lys Ala Glu Gln Ala Ala Glu Gln Ala Leu Lys Lys Leu Glu 210 Leu Glu 225 <210> 7 <211> 11 <212> PRT <213> Homo sapiens <400> 7 His Asn Glu Arg Leu Glu Phe Leu Gly Asp Ser <210> 8 <211> 20 <212> DNA <213> Artificial

<400> 8 atccctttct tccgcatgtg

<210> 9 <211> 20 <212> DNA <213> Artificial

<223> Synthetic

<220>

20

<220> <223>	Synthetic
	_
<400>	
gccaag	gcgt gacatgatat
<210>	10
<211>	20
<212>	
	Artificial
<220>	<b>a</b>
<223>	Synthetic
<400>	10
	atta aagagcaagc
-55-00	
<210>	11
<212>	
	Artificial
<220>	Cumthetic
<225>	Synthetic
<400>	11
	ccaa agagettege
<210>	
<211>	
<212>	
<213> <220>	Artificial
	Synthetic
<b>44437</b>	PAHOHECTC
<400>	12
	tgga aagaagcaga
	- <del>-</del> <del>-</del>
<210>	
<211>	
<212>	DNA
<213> <220>	Artificial
<223>	Synthetic
<400>	13
	attt ccgcttgctg
<210>	14
<211>	20
<212>	DNA
<213>	Artificial
<220> <223>	Synthetic
~~~,	~ <i></i>

<400> atgctct	14 tett teceacetea	20
<210>	15	
<211>	20	
<212>		
	Artificial	
<220>		
	Synthetic	
	•	
<400>	15	
aaatac	tcca cacttgcatg	20
<210>	16	
<211>		
<212>		
	Artificial	
<220>	ALUITOIGI	
	Synthetic	
(223/	bynenecie	
<400>	16	
tgcacat	ttca ccaaagtcaa	20
<210>	17	
<211>		
<212>		
<213>	Artificial	
<220>		
	Synthetic	
(223)	bynenecie	
<400>	17	
	gggt cacaatctgg	20
<210>	18	
<211>	20	
<212>		
<213>	Artificial	
<220>		
<223>	Synthetic	
<400>	18	
	tgta gtggtccgac	20
220030	-55-5	
<210>	19	
<211>	40	
<212>	DNA	
<213>	Artificial	
<220>		
<223>	Synthetic	
<400>	19	

. .

caaggc	acgc ctctcagatc	gctagagaag	gcttttctca	40
	20 40 DNA Artificial			
<220> <223>	Synthetic			
<400> cattaa	20 ttct cgcagctagc	gctgcgttct	tcatcgacgc	40
<213> <220>	21 35 DNA Artificial Synthetic			
<400> ccaaata	21 actg atcgacaact	tattgaaact	tctcc	35
<211> <212>	22 37 DNA Artificial			
	Synthetic			
<400> gagttt	22 gaag aagcaattgg	agtaattttt	actcatg	37
<210> <211> <212> <213> <220> <223>	Artificial			
<400> tcgactt	23 cctg gcaagggcat	tcacatt		27
<210> <211> <212> <213> <220> <223>	24 26 DNA Artificial Synthetic			
<400>	24 tgcc agcttctgtt	tgtcag		26

•

```
<210> 25
<211> 26
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 25
tgtcagtttg tttgactttg ggacta
                                                                       26
<210> 26
<211> 26
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 26
                                                                       26
tttgctagga ggtggcgaag tttcac
<210> 27
<211> 30
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 27
                                                                       30
gcttgatggc ctcttctcca ggataaatgc
<210> 28
<211> 30
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 28
                                                                       30
aatgctgtgc ctaattcctg tgcgtcttgc
<210> 29
<211> 48
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 29
                                                                       48
caggtgctgt cctcatcaga ctcacactcg gattcactgg aactctct
```

<210> 30

```
<211> 26
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 30
cactgggcag gaaagaacta gggttg
                                                                   26
<210> 31
<211> 26
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 31
tggaaactat taaaactggg aggtgg
                                                                   26
<210> 32
<211> 50
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 32
aggcatggag ggaggggca tcatgaaggg gaaagtgcct tgtccaggag
                                                                   50
<210> 33
<211> 40
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 33
caaggcacgc ctctcagatc gctagagaag gcttttctca
                                                                   40
<210> 34
<211> 40
<212> DNA
<213> Artificial
<220>
<223> Synthetic
<400> 34
cattaattct cgcagctagc gctgcgttct tcatcgacgc
                                                                   40
<210> 35
<211> 20
<212> PRT
```

\*